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10/796,259	03/09/2004	James L. Ferguson	OSVRP152USA	2380

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WARREN SKLAR
RENNER, OTTO, BOISSELLE & SKLAR, LLP
1621 EUCLID AVE
19TH FL
CLEVELAND, OH 44115

EXAMINER

HOLTON, STEVEN E

ART UNIT	PAPER NUMBER
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2629

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08/04/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/796,259	Applicant(s) FERGASON, JAMES L.	
	Examiner Steven E. Holton	Art Unit 2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 April 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 3-16, 18-25 and 31-44 is/are pending in the application.
- 4a) Of the above claim(s) 3-15 and 31-35 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 16, 18-25 and 36-44 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This Office Action is made in response to applicant's amendment filed on 4/24/2009. Claims 16, 18-25, and 36-44 are currently pending in the application. An action follows below:

Response to Arguments

2. Applicant's arguments with respect to claims 16, 18-25, 36, and 44 have been considered but are moot in view of the new ground(s) of rejection.

The amendments to the claims and arguments maintain that the prior art references fail to teach the concept of maximizing the shades of gray in the displayed images. The Examiner respectfully disagrees with this argument.

The disclosure of the current application recites "a control responsive to such data to control the characteristics of incident light... to tend to optimize (maximize) contrast or shades of gray" (page 8, lines 11-14). This particular statement in the specification suggests that the terms optimizing and maximizing can be used interchangeably within the definition of the invention. Further, the Examiner notes that in some cases an optimized setting of a device is a maximization of settings of the display device.

The disclosure also states "contrast (e.g., shades of gray)" (page 9, line 1) which teaches that the contrast of a display device may also be called the shades of gray the display device. Therefore, the references used to adjust the contrast of a display device are also adjusting the shades of gray of the display device as the terms are equivalents

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based on the definitions within the specification. The Daly reference are capable of optimizing the contrast of displayed images on the passive display device are also optimizing the shades of gray of displayed images on the display device. And when optimizing the shades of gray, the operation state that is determined to be optimal could be equivalent to maximizing the shades of gray of the display. Therefore, Daly does teach maximizing the shades of gray of images displayed on the display device as recited in claim limitations.

Regarding the arguments regarding color fidelity, the color fidelity of a display system is how closely a display system is capable of reproducing the colors of the input image signal. The particular ability of a display system to produce certain colors are based on the type of display device and how the display device is constructed. The system of Daly adjusts the luminance of the backlight of the display device to produce desired color images. The adjustment of the backlight could be used to produce images with maximized color fidelity but lack in brightness or contrast. Whereas, color fidelity could be reduced but overall brightness or contrast of a screen may be increased. Therefore, the adjustment of the backlight of Daly could be used to maximize (optimize) the color fidelity of the displayed image based on the image data transferred to the display device and further based on the characteristics of the display device from the production of the display device.

Applicant's arguments, see pages 9 and 11, filed 4/24/2009, with respect to the rejection(s) of claim(s) 37-43 under 35 USC 103(a) have been fully considered and are

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persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of newly applied prior art.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claim 44 is rejected under 35 U.S.C. 102(e) as being anticipated by Daly (USPgpPub: 2003/0090455).

Regarding claims 44, Daly discloses a display system with a processor (Fig. 2, element 58) that receives image data and processes that data to separate it into image data and luminance data and transmits the data separately to the display device (Figs. 3-5, elements 74 and 82; paragraphs 24-26). Daly further discloses using liquid crystal display device (paragraph 18) and performing the separation of image data and illumination data from multiple images in sequence (paragraph 35).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 16, 18-25, and, 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Daly.

Regarding claim 16, Daly discloses a system for adjusting the illumination characteristics of a light source for a display device (paragraphs 24-26). The optical characteristics of the light source are changed based on the inputted video signal (Figs. 3-5, step of extracting luminance data from the video signal). Daly further discusses that adjusting the light source based on the extracted luminance data increases the contrast of the displayed image (paragraph 36).

However, Daly does not expressly disclose maximizing the shades of gray (contrast) of the display device.

At the time of invention it would have been a matter of design choice for one of ordinary skill in the art to maximize the contrast of the displayed images based on adjustment of the light source of the display device. The relationship between the luminance of a display and the contrast of the display is well known in the art of display devices and it would have been obvious to one of ordinary skill in the art that luminance levels could be selected so as to maximize the contrast of a display device or to produce a desired contrast level of the displayed image. Therefore, it would have been

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a matter of design choice to maximize the shades of gray (contrast) of the display device of Daly by controlling the light source of the display device.

Regarding claim 18, Daly discloses a system for adjusting the illumination characteristics of a light source for a display device (paragraphs 24-26). Daly further discloses using a color display device and adjusting the illumination based on the color components of the display device (paragraph 25).

Daly does not expressly disclose adjusting the illumination characteristics to optimize or maximize the color fidelity of the display device.

At the time of invention it would have been obvious to one of ordinary skill in the art to optimize or maximize the performance of the display device for adjustment of the color fidelity of the display device. Color fidelity is well known in the art of display devices dealing with having a display device reproduce colors as perfectly as possible. Thus, it would have been a matter of design choice to adjust the operation of the display to produce a desired level of color fidelity. This could include optimized or maximized color fidelity based on the type of output desired of the user. A viewer could opt for a brighter image having less color fidelity or a dimmer image having higher color fidelity. The selection of maximized color fidelity to produce a color image that most closely resembles the input image would be a matter of design choice based on the desired operation characteristics of the display device. Thus, it would have been a matter of design choice to design a display system for adjusting the illumination of an image with optimized color fidelity based on the display system.

Regarding claim 19, Daly discloses a display system including a display device with a processor (Fig. 2, element 58) for analyzing input data into image data and illumination data (Figs. 3-5; paragraphs 24-26). The data is used to control the brightness of the back light and the gamma characteristics of the display device and adjusting the gray scale of the display device based on the calculated illumination data (paragraphs 25-26).

However, Daly does not expressly disclose selecting the operation of the light source to maximize shades of gray of displayed images.

At the time of invention it would have been a matter of design choice for one of ordinary skill in the art to maximize the contrast of the displayed images based on adjustment of the light source of the display device. The relationship between the luminance of a display and the contrast of the display is well known in the art of display devices and it would have been obvious to one of ordinary skill in the art that luminance levels could be selected so as to maximize the contrast of a display device or to produce a desired contrast level of the displayed image. Therefore, it would have been a matter of design choice to maximize the shades of gray (contrast) of the display device of Daly by controlling the light source of the display device.

Regarding claims 20, 21, and 23, Daly discloses transmitting the data within a computer processing environment (Fig. 2, element 58). The use of radio or modulated video signals, the use of memory devices such as dvds, cds, tape, computer memory and hard drives, and providing digitized data in a computer system are all well known in the art. The Examiner takes Official Notice that the use of these types of digital signals

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and storage devices would be obvious to one of ordinary skill in the art in a digital display system described by Daly.

Regarding claim 22, the Examiner takes Official Notice that the use of a multiplexer for transmitting multiple sets of data from one device to another is well known in the art of data transmission. At the time of invention it would have been obvious to one of ordinary skill in the art that a multiplexer could be used to aid in the transmission of data within the display system described by Daly for transmitting different sets of data along the same communications path.

Regarding claim 24, the claim is similar to claim 19 in the use of display data for operating a display device to maximize the shades of gray provided to the display system. The use of parameters to maximize aspects of the system would be a matter of design choice as discussed above in regards to claim 19. Also the transmission of the data within the system of Daly (from the processor to the display and within the processor) require the use of some type of transfer medium which is well known in the art of the computer devices. Thus, the display system described in claim 24 would have been obvious to one of ordinary skill in the art in view of the teachings of Daly.

Regarding claim 25, Daly discloses considering data from a sequence of images or multiple images (paragraph 35).

Regarding claim 36, Daly discloses a display system including an apparatus for evaluating image and illumination data (Fig. 2, element 58) to adjust the brightness of a light source based on luminance data associated with the image data (Figs. 3-5, step of extracting luminance data from the video signal). Daly does not expressly mention an

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image obtaining device to provide the image data, but such an element is inherent within a display system of Daly. Without an image obtaining device there would be no image data to be processed by the data processing unit thus, there must be some element for providing the input data for processing that is the image obtaining device. Also, Daly does not expressly disclose maximizing the contrast of the image displayed by the display device, but similar to the use of maximization in claims 16, 19, and 24, it would be a matter of design choice for one of ordinary skill in the art to adjust the backlight of a display device to maximize the contrast of images displayed on the display device.

5. Claims 37-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Daly in view of Edwards et al. (USPN: 7136528), hereinafter Edwards.

Regarding claim 37, Daly discloses a method of operating a display device that includes adjusting a characteristic of an input light incident on the display device to obtain a desired appearance of the displayed image (paragraph 24). Daly does not disclose how video data is received by the liquid crystal display, but the Examiner notes that it is well known in the art that video data can be transmitted to liquid crystal displays from external sources such as computers, television receivers, and similar video generation equipment. The video data of Daly is then processed using the data processor (Fig. 2, element 54) and the display device and backlight are then operated to generate desired images based on the received video data (paragraphs 23-25).

However, Daly does not expressly disclose a method of editing images to be displayed on the display device that involves making adjustments to characteristics related to the level of the backlight of the display and then storing the changes to the characteristics for later subsequent use to display the image.

Edwards discloses an image editing system for editing digital images. The system includes the ability to adjust various characteristics of a digital image including the brightness and luminance of the image (col. 4, lines 33-40). Edwards then discloses storing the adjusted characteristics of the image and the stored images can then be used to obtain the desired appearance on a display device (col. 5, lines 29-44).

At the time of invention it would have been obvious to one of ordinary skill in the art to combine the teachings of Daly and Edwards. The editing system of Edwards could be used to edit images that would then be displayed on a display device as described by Daly. The editing methods of Edwards include adjusting the brightness and luminosity characteristics of the image. The luminance of an image displayed on a display device as described by Daly uses specific control of the backlight system to adjust the luminance of the displayed image to a desired appearance. Therefore, the images edited on the system of Edwards adjusting the luminosity and brightness of the image would then adjust the characteristics of the input light from the backlight of the display of Daly. The rationale would be to use a known display system with a known editing system to provide image data to the display device with expected results. Thus, it would have been obvious to combine the teaching of Daly and Edwards to produce a method of editing an image as described in claim 37.

Regarding claim 38, Edwards discloses viewing an image before performing editing on the image (col. 5, lines 29-38), but Edwards does not expressly state viewing the image while performing editing on the image. The Examiner takes Official Notice that it is well known in the art of digital image editing to active change a viewed image as it is being edited. Standard computer programs such as MS Paint, Corel Draw, Adobe Photoshop are well known to change a displayed image while the image is being viewed. It would have been obvious to one of ordinary skill in the art to show the editing changes to the images being displayed by Edwards during editing of the image to for a user to view the effect of the editing to the image.

Regarding claim 39, Edwards discloses the user performing the editing of the images (col. 5, lines 29-38).

Regarding claim 40, Daly discloses using luminance characteristics of image data to adjust the contrast and brightness (gamma) of an image to be displayed on the display device (paragraphs 23-26).

6. Claims 41-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Daly in view of Edwards as applied to claim 37 above, and further in view of Ohyama et al. (USPN: 7002623), hereinafter Ohyama.

Regarding claim 41, as discussed above the combination of Daly and Edwards disclose all of the limitations except, "obtaining the illumination of an input scene portrayed by an image, and said adjusting comprising adjusting input light to provide an image having illumination that is substantially the same as the input scene." Daly

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discloses adjusting the input light based on the luminance data stored as part of the image data to be displayed. Edwards discloses editing the luminance of images and saving the edited images to produce images with desired visual aspects to display on a display device.

Ohyama discloses a method of obtaining images and obtaining the illumination information about an obtained image so that the image can be displayed with substantially the same illumination (col. 4, lines 32-61). Ohyama uses an input system to measure the illumination of a scene (Fig. 1, element 5) and the illumination information is then used to generate a digital image that is displayed on a display device (Fig. 1, element 3).

At the time of invention it would have been obvious to combine the teachings of Daly, Edwards, and Ohyama to produce a method of editing images so that a displayed image is produced with an adjusted light source so that the illumination of a displayed image is the same as the input scene. The method of editing and displaying an image of Daly and Edwards could be combined with the image input system of Ohyama so that received images could include illumination information of the input scene so that displayed images would have the same illumination as the input image. The rationale would be to produce observed images that would closely reproduce the originally input image for viewing by an observer (Ohyama; col. 2, lines 35-64). Thus, it would have been obvious to combine the teachings of Daly, Edwards, and Ohyama to produce a method of editing an image as described in claim 41.

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Regarding claim 42, Ohyama discloses measuring the luminance information of the input scene using a spectroscope or photometer (col. 4, lines 40-45). The use of these types of devices would provide an average value of the illumination of the input scene or could be used to produce a spatial distribution of the light intensity in the input scene area.

Regarding claim 43, Ohyama discloses taking multiple images of an object and recording different illumination information for each image taken (col. 6, lines 28-37).

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven E. Holton whose telephone number is (571)272-7903. The examiner can normally be reached on M-F 8:30-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached on (571) 272-7681. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Bipin Shalwala/
Supervisory Patent Examiner, Art Unit 2629

/Steven E Holton/
Examiner, Art Unit 2629
July 31, 2009